

# ***NAVY MEDICINE***

May-June 1991



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# NAVY MEDICINE

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**COVER:** Navy corpsmen of USS *Relief* test a lifesaving device designed to rescue survivors from a sinking ship. Story on page 8. Photo from BUMED Archives, ca. 1937.



## **Navy Medicine 1909**



**Corpsmen set up tent quarters near  
Naval Hospital, Norfolk, VA.**

BUMED Archives

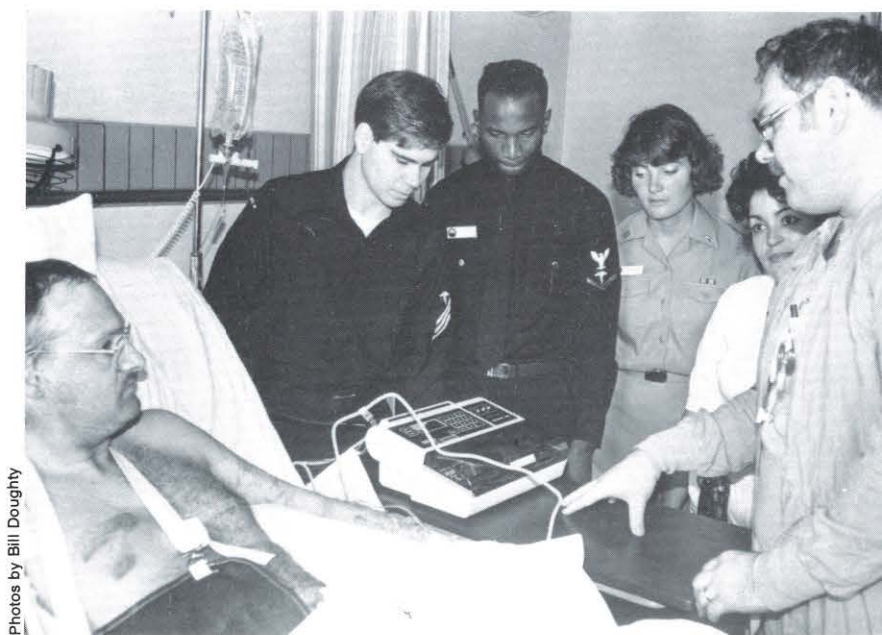
# Controlling Severe Pain With "Push of a Button"

**I**magine lying in a hospital bed; not only do you have serious burn injuries, but you have undergone surgery and are now forced to endure painful physical therapy in order to maintain use of your arm. The pain from the injuries, surgery, and physical therapy would be unendurable, but is controlled successfully—by you—with the push of a button.

The state-of-the-art patient pain management technique known as Patient Controlled Analgesia (PCA) was initiated last fall at U.S. Naval Hospital, Yokosuka, Japan, by LT Joseph K. Statkus, MC, head of the anesthesia division. "This system is very big back in the States," said Dr. Statkus. "Instead of an injection of morphine into the patient's muscle by the doctor or nurse, the patient presses a button to release a small amount of analgesia into his I.V. It is much more effective."

The patient cannot "overdose." He or she simply falls asleep if the button is pushed too often. Safety features and checks prevent further overdosing. One of the big advantages of PCA therapy is that the doses of pain medication are tailored to each patient's individual needs. Studies have shown that PCA requires less medication, decreases anxiety with patients, and lowers the lengths of hospitalization stays.

The first patient to receive PCA treatment at Yokosuka is CWO2 Michael S. Huffman, injured 20 June 1990 in an explosion and fire on USS *Midway*. "He was the perfect candidate," said Dr. Statkus. Gunner Huffman suffered burns on much of his body and was treated at Brooke Army Medical Center in Texas. He returned to Yokosuka to undergo surgery to repair the rotator cuff on his right shoulder. Postsurgery physical therapy would be excruciatingly painful



Photos by Bill Doughty

**Dr. Statkus and CWO2 Huffman demonstrate Patient Controlled Analgesia (PCA) for nurses and hospital corpsmen on Ward 5-B at U.S. Naval Hospital, Yokosuka.**



without help from the PCA.

The alternative to PCA is Intramuscular Analgesia. According to a study of pain management by Dorothy Jackson in the *Journal of Intravenous Nursing* (Vol. 12, No. 1, January/February 1989), "Patients are frequently undermedicated or have been sedated to a point of being unable to participate in the early postoperative period."

Nurses prefer the PCA device because of its improved pain control, ease of ambulation (patients are on their feet and moving sooner), rapid recovery of patients' bodily functions, and confidence in the safety of the device.

As for the patient's opinion: "It works!" said CWO2 Huffman. "I always have a little pain, but this helps me keep it down." He added that he is getting great care at the hospital. "I like the people here. They are really nice. Everybody here seems to have a good attitude, even the so-called short-timers. They do their job and they do it professionally."

Dr. Statkus came to Yokosuka in August 1990 after serving his residency at Naval Hospital, Portsmouth, VA, where he earned a 6-month fellowship in the treatment of acute and chronic pain. He has treated not only post-surgery inpatients, but also outpatients suffering chronic pain.

He said he appreciated the support of the Medical Director of the U.S. Naval Hospital, CAPT Jerry D. Spencer, in starting the PCA program. Although he is only on a 2-year tour, through August 1992, he said he might want to stay longer. "My wife really likes it here. We're thinking about extending." □

—Story and photos by Bill Doughty, Public Affairs Office, U.S. Naval Hospital, Yokosuka, Japan.



**Gunner Huffman and Dr. Statkus**



**Patients control their own pain with the push of a button.**



LCDR J. Hudson

# Navy Surgeon Returns After 45 Years

**L**CDR Jack Hudson first stepped on Japanese soil in July 1945, as an "infantry replacement private" and part of the American occupation force—first on Okinawa and later in the town of Shibata, on the west coast of Japan. Hudson was second scout in a rifle squad of the 27th Infantry Division. Now, he is a surgeon stationed at U.S. Naval Hospital, Yokosuka, Japan.

"Japan at that time was quite rural, pastoral, with very few automobiles; a lot more rice paddies and not many people," recalls Hudson. "Tokyo was rubble. It seemed that the Dai Ichi Building and Emperor's Palace were the only buildings left standing. The Dai Ichi became General MacArthur's headquarters, and they didn't touch the palace because of the Emperor."

In 1945, when Private Hudson reported to Okinawa, Japan, most of the fighting was over. "We were on the northern part of the island clearing out some caves," said Hudson. "Then, after the surrender on the Battleship *Missouri*, I flew into Atsugi on the 27th of August and went on to a little town called Shibata, near Nigata on the west coast of Honshu." He remembers, "It was quite a different culture. The ladies wore kimonos and the police had black uniforms, rode bicycles, and carried swords. I think the people were more afraid of the police than they were of the soldiers."

After World War II, Japan was a very poor country filled with very hungry people. "We were stationed in an old Japanese military barracks," said Hudson. "We tried to help them as much as we could. We had K-rations and C-rations and we would share them with the people. I remember them drying racks of locusts on big screens. That was their food."



Since then Japan has grown to become a world leader in technology and commerce, but what was once a calm, peaceful, and quiet country has become harried and stressful for many of the Japanese people, said Hudson. "People in the United States view the Japanese as an extremely wealthy nation, but I think they have to struggle for their money. They work hard for what seems to be relatively low income."

Dr. Hudson earned his M.D. degree in 1956. "I wouldn't have been able to go to college and medical school if it hadn't been for the G.I. Bill." He served his residency in general surgery at Barnes Hospital and St. Elizabeth Hospital and practiced as a general surgeon for 27 years in Grand Prairie and Arlington, TX.

"One day I was reading the paper, and I noticed in a published letter from VADM Zimble to the Texas Medical Association, that he would accept surgeons up to age 68. I was commissioned, went to OIS at Newport, and served at Millington Naval Air Station for a year and a half," he said. "I saw an accompanied tour to Yokosuka, and I wanted to see Japan again . . . after 45 years."

Since arriving in Japan, Hudson says he has found a very attractive base. "I'm very happy to be here, and I know I will enjoy the tour, added Hudson. "CAPT Wright (hospital CO) has been very supportive . . . so has CDR Block, the department head, and LCDR Stearns, charge nurse of the surgery clinic . . . very supportive. The camaraderie in the Navy is one of the things that makes it so special." □

—Public Affairs Office, U.S. Naval Hospital, Yokosuka, Japan.



**Left: Private Hudson in 1945. Below: Hudson (center) poses with a friend and his brother 45 years ago.**



# Cross-Cultural Medicine in the Navy and Marine Corps

CAPT Mark L. Dembert, MC, USN

**T**he underpinnings of cross-cultural medicine require a knowledge and appreciation of the numerous specific factors that shape concepts of wellness and illness, as well as treatment and recovery, among races and ethnicities worldwide. Aside from the prevailing concepts of traditional Western medicine, these other factors include society in general, philosophy, family, folklore, spirituality and mysticism, superstition and shamanism, occupation, environment, natural medicines, ritual, and individual behaviors passed down through generations and practiced without question.

It is not an understatement to say that cross-cultural medicine is a large part of our day-to-day health care delivery in the Navy and Marine Corps at sea or on shore, in CONUS or overseas. Consider the diversity of races and ethnicities which comprise our active duty personnel, be they foreign- or American-born. Consider the diversity of races and ethnicities among dependent children, spouses, or parents; retirees; civilian staff; and foreign nationals for whom we care on a humanitarian basis.

As an illustration, I well remember my first exposure to cross-cultural medicine as a young undersea medical officer. I had just reported on board USS *Grayback* (SS-574) at Subic Bay in the summer of 1977. One day not long after, a crewmember brought his Filipino wife and 3-month-old infant by to see me for medical advice. The child had been irritable, throwing up milk, and spiking a fever. As the mother unwrapped several layers of clothing and blankets, I wondered out loud about the incongruity of a febrile child being wrapped in so much clothing on a

typically hot, sunny, and humid day in early Philippines rainy season. The mother assured me that it was for the "best health" of the infant, this was what her mother did with her and her brothers and sisters, and this is what she does with her child when he is sick. The child appeared dehydrated, flushed, and listless. I arranged for an immediate evaluation at the Subic Bay Naval Hospital emergency room. The child was appropriately treated and recovered without incident.

It wasn't until later in my tour that my readings in cross-cultural medicine and talks with Filipino doctors and corpsmen introduced me to the concept of "timbang." (1) This is the principle of balance, central to Filipino concepts of health. Basically, health is a result of balance, and illness results from an imbalance. Rapid shifts from an endogenous hot or warm condition to a cool or cold state within body fluids or air spaces is felt to promote illness. Thus, a possibly sick child should be protected as much as possible from being cooled by undesirable breezes or drafts; hence, extra layers of clothing or blankets are called for, irrespective of the weather. The mother and child I saw most likely demonstrated the power of age-old healing beliefs and traditions, transmitted through generations and still influencing one's basic beliefs in illness, treatment choice, treatment compliance, and recovery.

Cross-cultural medicine requires an understanding—or at least a "bedside curiosity and awareness"—of some basic principles (2) applied on a case-by-case basis:

First are the explanatory models of disease. Is an individual "sick" in our (Western) terms or in theirs? How are



illness and health in the particular culture defined at the individual, family, occupational, and societal levels? What are the levels of causality? Anatomic or physiologic? Behavioral? Societal? Explanatory models also include the concept of medical pluralism, that is, a physician, a faith healer, a homeopath, a minister, etc. may all be used by that individual to get well.

Second, what is the role of diet, exercise, rest, recreation, sexual behavior, religion, and rituals?

Third, the emotional impact and stigma of illness and treatment by a traditional medical physician may play a very significant role in the person's compliance with treatment and overall recovery. What does an infection mean to that person? Neoplasm? What stigma does psychiatric illness have for the individual and his family? All of these may determine the response of the family and friends in supporting this individual and directly caring for him.

Fourth, what are the language barriers to providing health care, when the practitioner is from a different culture? Even the most innocuous greeting or term, medical or otherwise, can be "taboo." Are there certain bodily systems that require more delicate explanation, e.g., reproductive, psychiatric? Are there metaphors or aphorisms that are required per custom? Moreover, physical gestures and customs both in and out of the office/hospital room, in conversing with patients, families, friends, or other indigenous healers, are important to consider. Finally, how does one undo an already made conversational or social "taboo?"

Fifth, what is the importance of the ethnic elder as patient, family member, or local health provider? In this short space provided, I cannot provide details of each culture and its concepts as outlined above. To touch upon a few, consider the importance of Filipino "timbang"; the Japanese role of restraint of "ritual behavior" and communication and the concept of illness as an expression of stress in the society as a whole; the Caribbean concept of disease etiology and treatment related to "factors" of cold, gas or wind, heat, bile, blood imbalance, or germs; the role of natural medicines and "hot-cold" theories of disease causation among Southeast Asians; and the Spanish-American and Mexican-American concept of "curanderismo."

Here is general advice on how to gain a better appreciation for cross-cultural medicine philosophies and practices in your geographic and/or operational duty stations, whether in CONUS or OCONUS:

- Learn the basics of the local foreign language through introductory courses taught on base.
- Look for magazine articles, e.g., *National Geographic*,

to enhance appreciation for people, places, and history.

- Talk with and get to know active duty military personnel of different ethnicities or races, as well as their families and civilian staff at your facility.
- Take an interest and participate in local events at off-base hospitals, festivals, and local medical societies. Be a guest speaker at these events.
- Visit local universities, e.g., departments of anthropology and sociology (medical), for gaining further information on particular cultures. Invite faculty to speak at your medical facilities.
- Participate as guests at meetings of local societies, e.g., Filipino-American, Hispanic, Afro-American, Arab-American.
- Try local ethnic foods at restaurants and festivals. Schedule your medical department meetings at local ethnic restaurants.
- Contact tenant commanding officers to identify active duty or civilian staff members of various races and ethnicities who can be professional and social points of contact.
- For ethnic patients who present difficulties in understanding their illnesses and participating in your treatment and their recovery, call in family members or military personnel as support historians and translators, as needed.
- Use other resources to assist your patients in direct in-hospital care as well as discharge planning. Ask the patient what friends or family they would like to have come in and contact them personally, if possible. Find out what generations of family members, either locally or long distance, should be involved. Ask patients about cultural, dietary, or hygiene practices that need to be observed in-hospital. Can local foods be provided while the patient is an inpatient?
- Finally, and most important, be curious about your patients. Explore the patient's cultural heritage as well as how he or she views illness, treatment, recovery, and what roles the patient's local or distant family members play in his or her daily life.

Thinking and practicing cross-cultural medicine as part of delivering total quality patient care is both professionally challenging and individually rewarding.

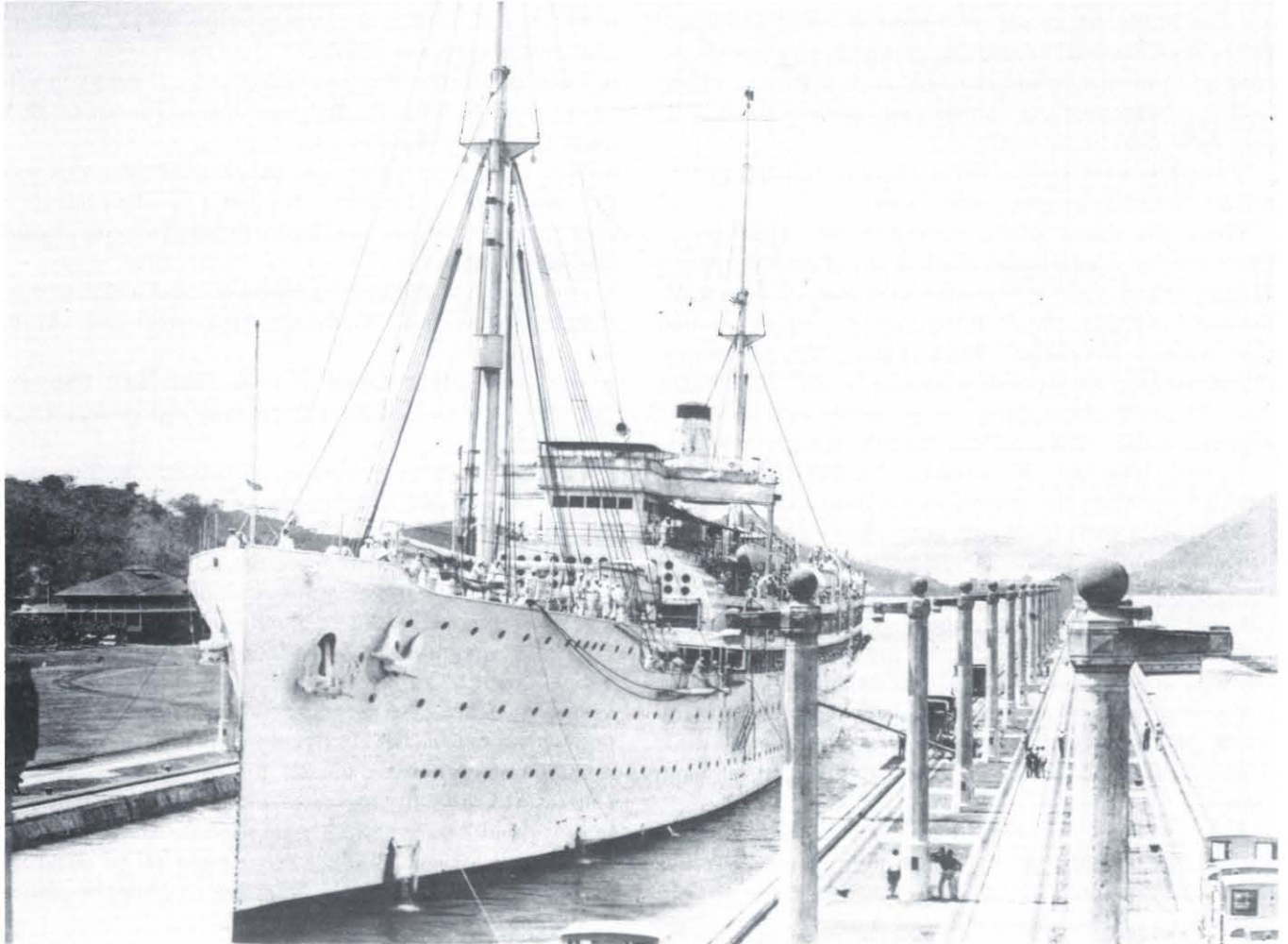
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2. Clark MM. Cultural context of medical practice. *West J Med.* 1983;139:806-810. □

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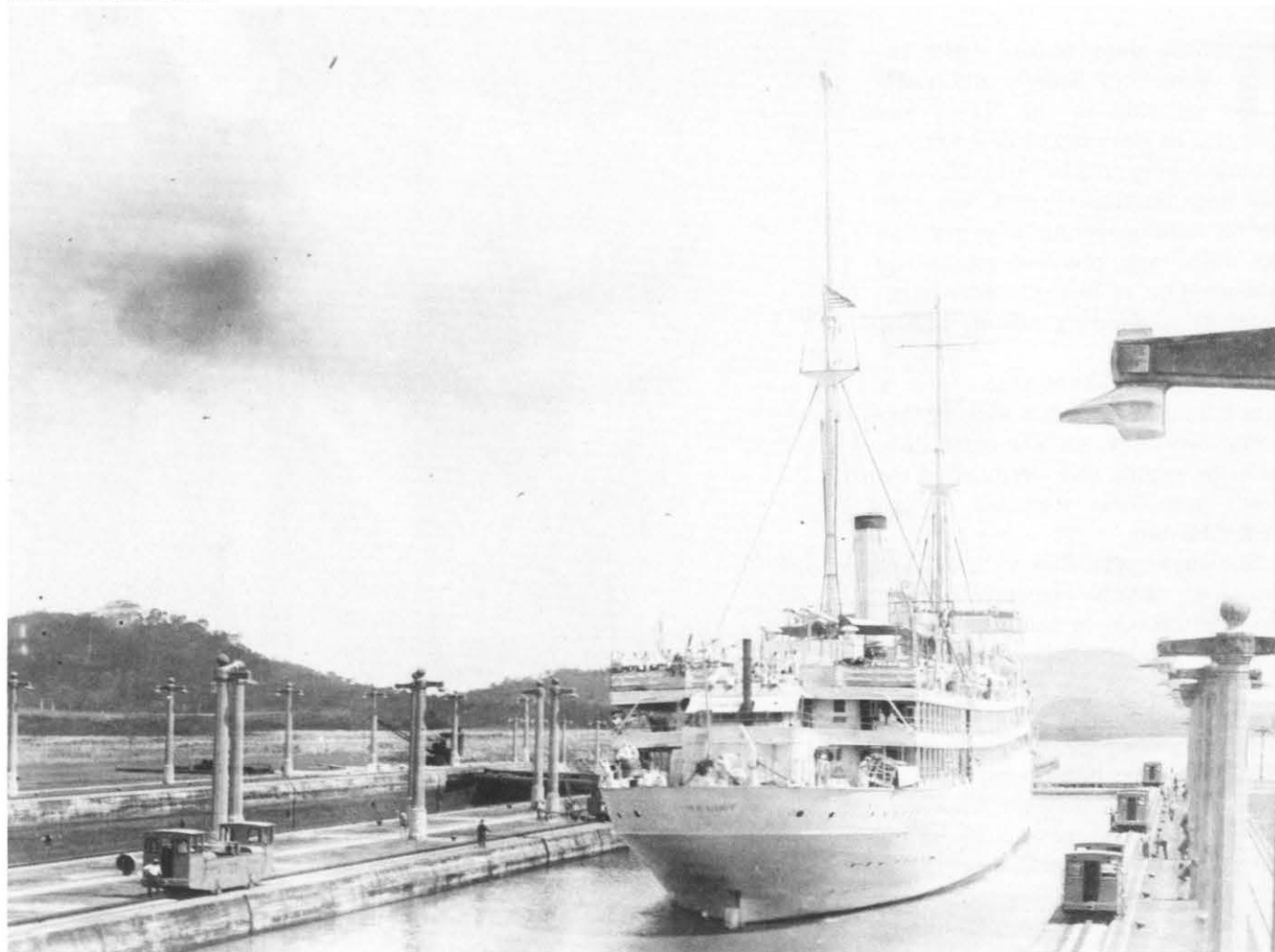
USS *Relief* transits the Panama Canal on 23 March 1923 to join the Pacific Fleet.



# Vagabond Ship: A Corpsman's Service With USS *Relief*

William Dixon Southworth, Ph.D.





*When USS Relief (AH-1) steamed from her Delaware River pier for the very first time on 16 Feb 1921, she was everything a hospital ship was supposed to be. Her radiant white, 483-foot-long hull with unraked bow and gracefully countered fantail contained a 500-bed hospital supported by the very latest in medical technology. Relief was a radical departure from what the Navy had grown accustomed to in its hospital ships. The standard practice had been to convert civilian steamers for hospital ship use. The*

*Civil War Red Rover had been a captured Confederate sidewheeler, the Solace, of Spanish-American War fame, was once a civilian steamship, as were the old Relief and Mercy of World War I.*

*The new Relief was unlike every other Navy hospital ship before or since, built from the keel up as "a physical nautical expression in steel and human skill of the ultimate in floating hospitalization." (1) The vessel's first chief nurse, J. Beatrice Bowman, hyperbolized Relief's seaworthiness.*

*The ship "is so safe that could her funnels be plugged she could in safety go under like a submarine or she could be rolled over and would always right herself." (2) Relief remained with the Atlantic Fleet until 1923 when she relieved USS Mercy (AH-4) in the Pacific, serving there as war with Japan loomed ever closer. Life aboard Relief during 1940-1941 on the eve of U.S. entry into World War II is documented in the following article based on letters written by the author, a hospital corpsman, to his mother.*

**T**hree days before 1940 began, USS *Relief*—only hospital ship in the Navy—was swinging its gleaming white 7,500 tons around a buoy in San Pedro Bay as it had done for several years. She wore her big red engineering "E" proudly on her only stack, proof of economical consumption of fuel oil under parsimonious engineering officer, LCDR Bliss.

She was a 16-knot ship—"once a year during its speed run, with the ship going downhill"—a principal ship, with the supply ship *Medusa*, of the fleet's base force stationed in San Pedro Harbor.

She was a casual ship, so casual that the chief warrant carpenter holding the quarterdeck on Sunday, 29 Dec 1939, wore only his uniform jacket and hat—with partially matching blue civilian pants—and grumbled as he sat in his easy chair on the quarterdeck, "This ship never moved until I got on it. Now it's moving all the time."

Still he went ashore when he did not have the watch, meaning most nights and weekends, for *Relief* rarely ventured out of port, and then only during daylight hours. But there was a change coming up: the April 1st to May 15th fleet maneuvers in Hawaiian waters.

The ship was being influenced by the war in Europe, now 4 months old. Examinations for promotion for enlisted men were being held more often, and officers were advancing in grade faster than they had expected.

Leave, surprisingly, was hard to get. There was a general response to hospital corpsmen who wanted leave, "We can't spare you." That response was very odd, for the ship was so overrun with hospital corpsmen that second class pharmacist's mates served as the captain's orderlies, a job usually held by a Marine private. But *Relief* had no



marines, though it reputedly had the largest guns in the Navy—World War I 18-inch never-used rifles set as ballast for the ship, a harmless rumor that could not be easily proved nor disproved.

#### 10 Feb 1940 San Pedro, CA

"Rates (promotions) are faster on the *Relief* than they were in San Diego. There are less HA's (hospital apprentices) and more Ph.M's (pharmacist's mates). In fact, there are only about ten HA's out of the 150 . . . hospital corpsmen aboard." Under the circumstances, a hospital corpsman with enough time in rating could expect early promotion to PhM3/c.

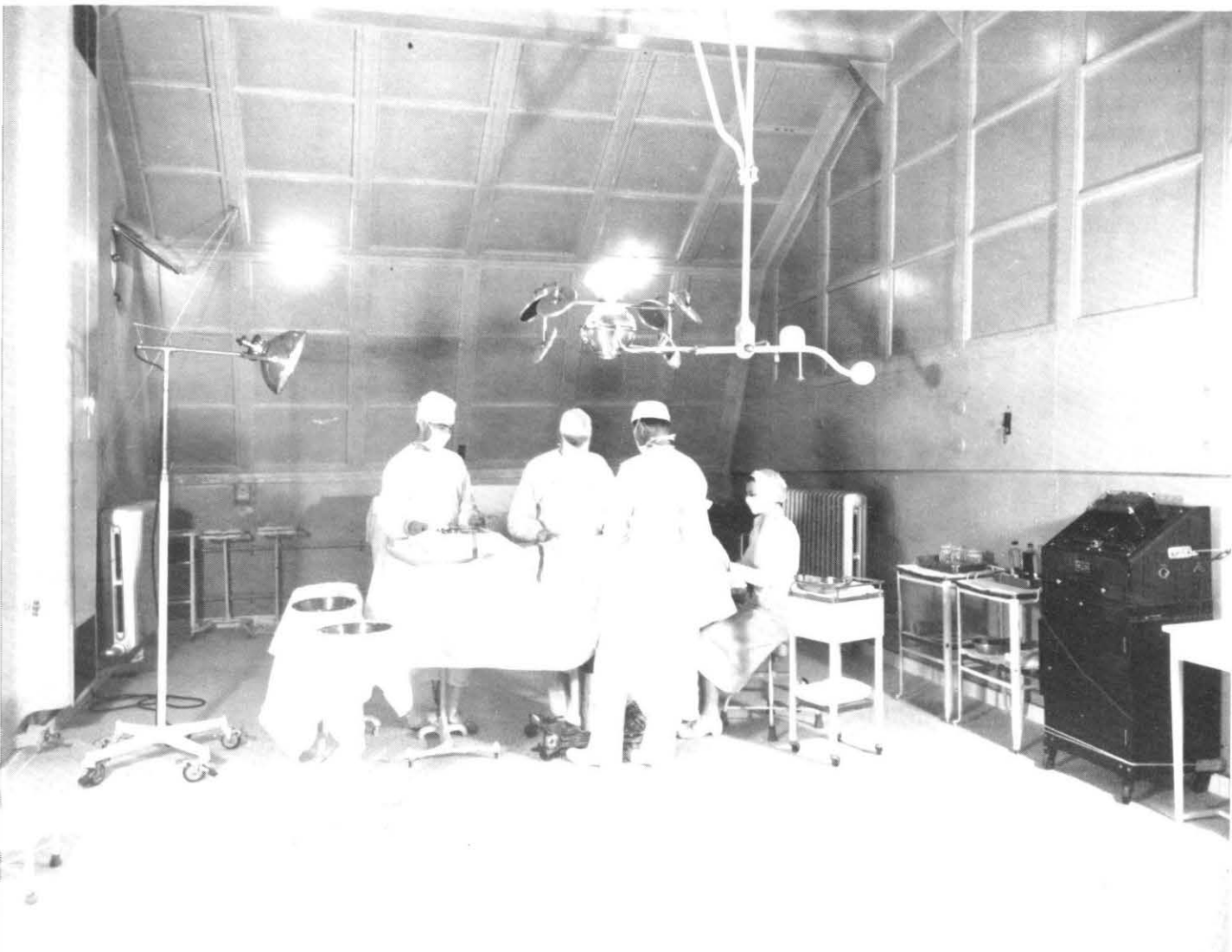
Although every enlisted man was "entitled" to 30 days leave per year under favorable conditions, leave was hard to get on *Relief*, except for men shipping over (reenlisting) or extending their enlistments.

#### 25 Feb 1940 San Pedro Bay

The ship was scheduled to go to Honolulu in the upcoming April 1st fleet maneuvers, ". . . because the fleet will have to have a hospital ship." But *Relief* was to serve as more than a hospital ship.

"Examinations are to be held next Monday. There are so many things that enter in that (one doesn't) expect too much."





*Opposite page: Relief corpsmen move a litterbound "patient" up one of the ship's ladders in this mid-1930s drill. Above: A surgical team works in Relief's state-of-the-art operating room. Note the special "shadowless" lighting system, ca. 1937. Left: Two patients rest in one of Relief's spotless medical wards, ca. 1937.*

### 15 March 1940 At Sea

The ship was preparing for the upcoming maneuvers, for during March it had gone to sea for 5 days running, unusual sea time for *Relief*. For many aboard, this being their first days at sea, there was excitement—and the keen anticipation of returning to Long Beach.

Promotions became real. The chaplain, new to the Navy, was surprised to find his promotion to two stripes and commissioning months before he expected them. Men promoted to higher ratings were dubbed "National Emergency Petty Officers."

### 18 March 1940 Long Beach, CA

*Relief* headed for dry dock in San Pedro. All the junior enlisted personnel were required to scrape and red lead the bottom of the ship. "Come on, sailors," exhorted one old coxun, "keep those wire brushes going."

And when the red lead time came, the same coxun said, "All right, sailors. One dip and two swipes. Don't try to be pretty. Get that red lead on." Interestingly, among those exempt from the dirtiest job a ship has were the messcooks, who were usually very new to the ship, and junior to most everyone else.

### 21 March 1940 En route to San Diego, CA

The ship is on the way to San Diego to unload passengers and make ready for the cruise. "Then of course the cruise will last for six weeks. Honolulu is definite, but (the ship's company) heard no more about Alaska."

### 26 March 1940 Off San Clemente Island, CA

The ship circled the island all day, calibrating the compass for the fleet maneuvers starting 1 April 1940.

The list for third class petty officers was published. All the men whose names were posted expected promotion because of the expansion of the Navy, and because *Relief* itself was short of third class pharmacist's mates.



### 1 April 1940 Long Beach

The 6-week fleet maneuvers began. The ship sailed west alone.

### 10 April 1940 At Sea

During maneuvers, *Relief* was, according to the quartermasters, serving as 10 attacking Japanese battleships. The ship sailed between two other larger ships to protect *Relief* from heavy seas.

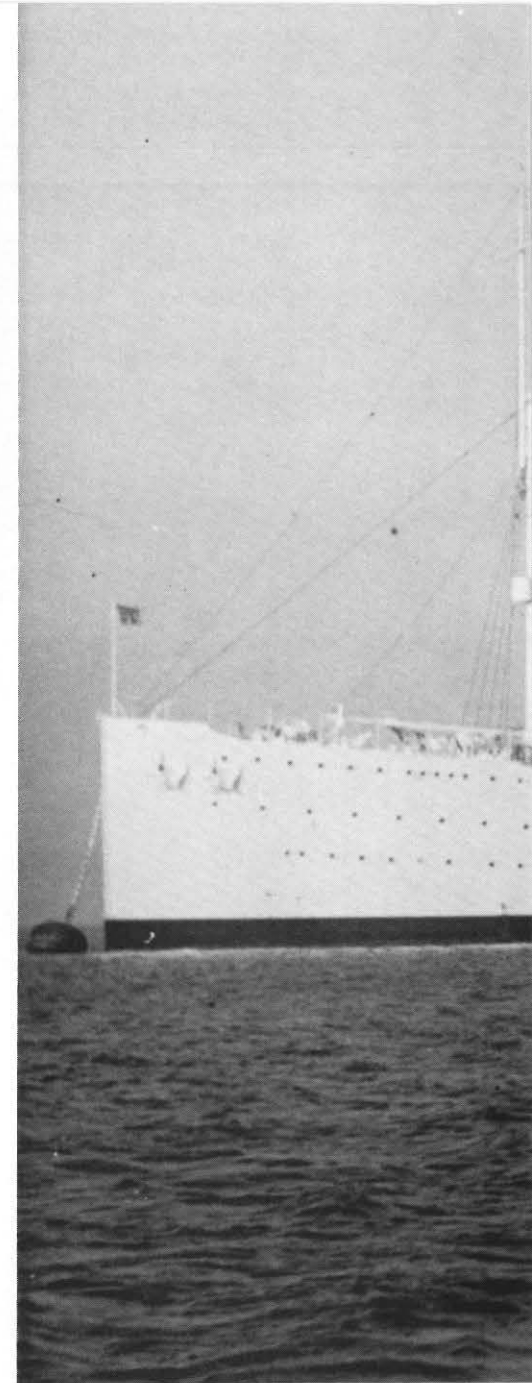
### 21 April 1940 Somewhere Southwest of Hawaii

The ship's "... been cruising around, maneuvering from right to left, from left to right, then playing sideways leap frog with a host of other ships. However, (the *Relief* is) due back in Honolulu (Pearl Harbor) Wednesday for ten days of 'pleasure and recreation,' ... a welcome relief from all this sky and ocean, ocean and sky business."

Paravanes were attached to the bow of the ship, running some 5 feet below the waterline. However, it was not expected that a hospital ship would need to protect itself against mines. The paravanes functioned well, though not equally, the port paravane running some 2 feet lower than the starboard one.

### 26 April 1940 Pearl Harbor, HI

News about the European war was distributed to the ship's company by radio and mimeographed sheets run



off on the ship from ship's radio reports.

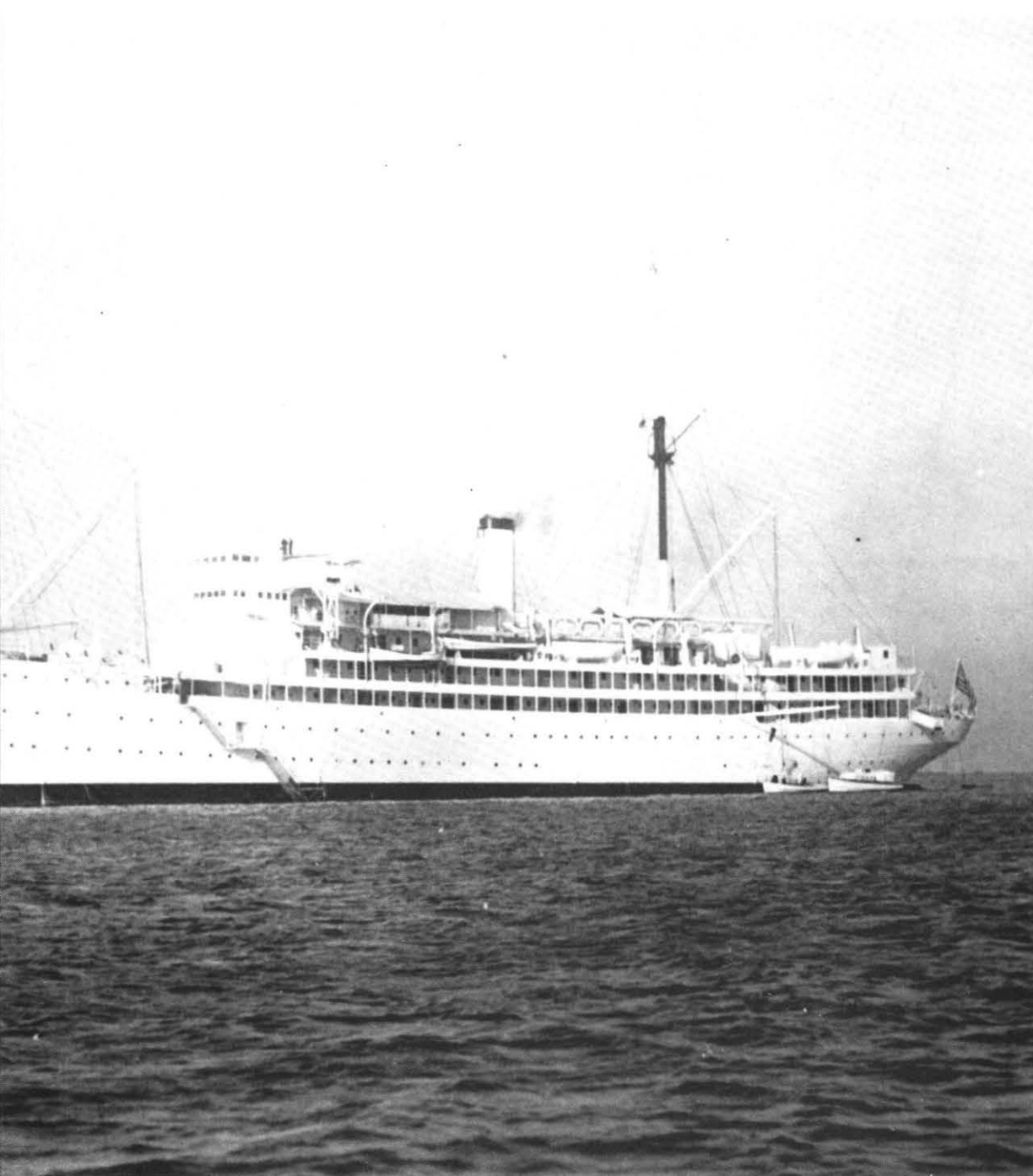
The anticipated promotions among the pharmacist's mates came through, effective 16 May 1940. "That means a raise of \$6 per month ... from \$54 to \$60, in equal payments, twice monthly."

### 26 April 1940 Pearl Harbor

"Pearl Harbor itself is rather small ... " being 110 yards across at its narrowest point. Decades before there had been pearls found there.

"... there (is) ... a great deal of tugging back and forth to get the





battleships in." They were moored on the south side of Ford Island, two by two, with a lesser vessel tied to the last single battleship if there was an uneven number of battleships. Individual aircraft carriers were moored on the north side of the island.

*Relief* "... came in earlier because it was the hospital ship," that despite the large naval hospital that overlooked Pearl Harbor.

"There was a searchlight display last night put on by the fleet 'on parade' before entering the harbor today . . . . It must have been a thrilling sight at close hand.

"At the pier twenty-five yards away is the *Pennsylvania*, the flagship of the fleet. It's a tremendous thing (108 feet abeam midships) and quite capable of 'maintaining national policy,' to quote Secretary of Navy Edison."

#### **29 April 1940 Pearl Harbor**

"... we leave next Monday" (for return to Long Beach).

#### **25 May 1940 Pearl Harbor**

"Secretary of State Hull has publicly stated that the United States cannot allow a disturbance in the Pacific. The fleet in Hawaiian waters is being used

**Left: PhM2 William D. Southworth as a *Relief* sailor. Above: *Relief* with her peacetime paint scheme, ca. 1937.**



**Relief at  
war, June  
1945**

to emphasize the point."

Though disturbed, the relationship of the United States and Japan was not yet threatening.

### **30 May 1940 Pearl Harbor**

The fleet was held in Hawaiian waters past its scheduled return date because of rumored ineptness in the fleet maneuvers. *Idaho* was trapped by its own theoretical mine field astern, and could only steam in a circle against the potential enemies ahead. A submarine was reported to have come up under an aircraft carrier, torn off 15 feet of stabilizing fin, and then sunk to its maximum operating depth of 300 feet before it was stopped. A quartermaster at the wheel of *Nashville* turned hard left when he was told to turn hard right, and almost scraped the side of another ship going in the opposite direction.

President Roosevelt, a president much involved in adding new ships to the Navy, was reported displeased with the fleet's maneuvers. Admiral

Richardson was under fire because of reported conflict with Washington over tactics. The Japanese resented the extended maneuvers in Hawaiian waters, protesting "the abnormal situation in the Pacific."

### **30 May 1940 Pearl Harbor**

"... should Japan invade the Indies [Dutch East Indies, now Indonesia], (there is) little doubt that the fleet will be sent westward because of the danger to the Philippines."

The Navy had "... only two hospital ships: the old *Mercy* and the *Relief*. The *Mercy* has long been decommissioned; so the *Relief* is the one and only now."

### **15 June 1940 Lahaina Roads, HI**

There was a flap on the bridge when a Japanese war vessel appeared at the opening of the Kealaikahiki Channel into the Lahaina Roadstead. *Relief* was alone, unable to defend itself. Nothing untoward happened; the

Japanese warship proceeding to a dock at Honolulu. Later, the Honolulu newspaper showed a picture of the Japanese training ship and a sentry on the dock, above whose head was the order, SALUTE THE SENTRY. There was resentment both aboard *Relief* and ashore to the sign and the attitude that produced it.

### **24 Sept 1940 Lahaina Roads**

"The *Relief* goes into Pearl Harbor for this weekend, leaves early Monday for the coast. Each watch is to get seven days' leave ..."

### **8 Oct 1940 San Diego**

"The ship got in about two hours ago ... unloaded patients and passengers, and expects to get underway for Long Beach within the hour.

"Hawaiian weather was very enervating, San Diego's is invigorating. The thermometer should read about 65 degree +." After a stay in Long Beach, *Relief* was on its way back to Hawaiian waters.





### 31 Dec 1940 Pearl Harbor

The ship "... has been tied up to the dock now for over two weeks. The 2nd of January the ship is to move out into the stream of Pearl Harbor. Perhaps it will be quieter, and a little more pleasant, but not as convenient."

### 12 Jan 1941 Pearl Harbor

Shortly the ship "... will be at sea, underway for the West Coast." The occasion was not dictated by anything as kind as altruism, but rather by the necessity of taking an insane draft (group of men) to Mare Island [hospital, at Vallejo, California]. The ship needs some work done on it; so it "... should be a good six weeks away from these idyllic shores."

### 20 Jan 1940 San Francisco Area

The ship passed under the Golden Gate Bridge, a first time for many of the ship's company. "Look up," said a chief quartermaster, "and you'll think the stack will hit the underside of the bridge."

*Relief* continued through strangely yellow waters to Vallejo, where the passengers were discharged to the Mare Island Naval Hospital.

The captain said, going in, "I hope to be back to sea before nightfall."

He was almost right. The ship passed back under the Golden Gate Bridge just after sunset, and entered the Pacific as the lights lit up San Francisco.

### 20 Jan 1941 At Sea, En route to Long Beach

The California coast, with its calibrated flashing lights at Point Sur, Lopez Point, down through Point Conception, gave a lift to the morale of the crew with the sure promise of early arrival at Long Beach. Even a squall line did not dampen the spirits of the ship's company.

### 23 Jan 1941 San Pedro

Despite rising concerns about war with Japan, men with expired enlistments are being discharged routinely.

The ship expects "... to go back to Hawaii about the 17th of this month."

### 30 May 1941 San Diego

The ship was in port, awaiting orders. Personnel were permitted ashore, but only in the dock area.

At lights out, the ship was still tied to the dock. The speculation as to the ship's destination ran: if the ship is at sea the following morning, and the sun is on the starboard, it is probably headed for San Francisco. If the sun is astern, back to Pearl Harbor. If on the port side, to the Canal Zone.

### 1 June to 9 June 1941 Along the West Coast of Central America

The ship sailed for Panama through waters that were mill pond quiet for the entire journey.

One day out of the Panama Canal Zone, *Relief* was "converted" into a cruise ship. Wherever "*Relief*" was painted topside, it was covered or

painted over. Everyone was required to wear civilian clothes topside. The ship's commission pennant was taken down. The ensign flew at the stern instead of the gaff, making it to appear to be a merchant ship. Since there were 12 Navy nurses aboard and they were encouraged to dance with the officers, to a casual observer, the all-white *Relief* could be considered a cruise ship.

### 10 June 1941 Panama Canal Zone

*Relief* passed through the Canal into the Caribbean, where she encountered clear weather and heavy seas. As the Pacific had been calm, the Caribbean was rough, rougher than any of the trips *Relief* had made between California and Hawaii.

### 14 June 1941 Guantanamo Bay, Cuba

The ship anchored in the bay. Many of the ship's company took liberty ashore, some staying on the base, others going to Guantanamo City by train.

The five-car, urine-reeking, windowless train was pulled by a steam engine for some 2 hours to Guanta-



Photo courtesy of William D. Southworth

**Dr. Southworth today**

namo City, a city with dirt streets and houses built on the Spanish style—plastered walls abutting the sidewalks with iron grillwork and inner courts.

One principal means of transportation was by undersized, sore-ridden, and fly-bedeveled burros. Everyone seemed to be oblivious of the open sores on the beasts.

"This place smells of overripe vegetables, horses, and heat."

## 20 June 1941 Norfolk, VA

The ship tied up in Naval Operating Base, its newly assigned home port. Gone are the charms of California. Instead the ship's company could enjoy the doubtful attractions of Norfolk, "by the sea, by the smell."

## 20 Aug 1941 Off North Carolina Coast

The largest joint maneuvers of the Navy, Army, Army Air Force, Marines, and Coast Guard in the history of the country were held for several days.

One hospital ward on *Relief* housed injured members of all the services, Navy, Army, and Coast Guard.

The ship went aground. Later, the captain and the navigator faced a Court of Inquiry. The captain lost five signal numbers. The navigator was an overaged reserve jg, so no one thought about him very much.

To refloat the ship, it was lightened. Crewmen removed the extra five-ton anchor from the forward hold. Medical journals dating back to 1923 were thrown out. Groups of enlisted men were assembled amidships, and sent racing from port to starboard and starboard to port to try to loosen the sand-locked ship. Finally, after a day aground, a high tide broke the ship free.

The maneuvers continued for several days. Many vessels doubled as landing ships, *Relief* and *Denebola*, being two of those. Joining in the maneuvers were at least 40 ships, counted from *Relief's* main deck.

## 22 Oct 1941 Boston Navy Yard

In the Boston Navy Yard, the ship

was quickly painted from the main deck upward by navy yard painters.

Some short-timers were discharged, but not one pharmacist's mate, whose enlistments would expire 7 Dec 1941!

## 4 Nov 1941 Argentia Bay, Newfoundland

The ship anchored in the same bay where Roosevelt and Churchill had had their fall meeting and where they had signed the historic Atlantic Charter. *Relief* kept up steam because of the large exposed area of the harbor to the Atlantic, a wise precaution that later allowed the ship to steam into the Atlantic when a storm hit the harbor. The ship got to sea safely, but came within 100 yards of running onto large rocks near the mouth of the harbor, missing them, according to one quartermaster, "By guess and by God."

The captain got back the five signal numbers he had lost when the ship went aground off the North Carolina coast the previous summer, being commended for "superior seamanship" in getting *Relief* to sea without running aground.

## 8 Dec 1941 Argentia Bay

The executive officer called the enlisted men into the enlisted men's mess compartment to reveal the bombing of Pearl Harbor, and the institution of the "Orange Plan."\* He did not say what the Orange Plan was.

## 14 Dec 1941 At Sea

The ship now sported a foot-wide green stripe that ran the length of the ship halfway between the main deck and the waterline, interrupted on both sides by large red crosses. Large red crosses were also painted on the stack.

At night the ship was fully lighted as was customary for a hospital ship. One crewmember wondered if the fact that *Relief* was a hospital ship would deter a U-boat captain from sinking her. However, *Relief* ran through a squall line on its way to Boston, typical

North Atlantic winter weather that might have prevented the surfacing of any U-boat inclined to shell the ship.

## 9 Jan 1942 Norfolk, VA

A letter written on *Relief* 2 days after Pearl Harbor in Argentia Bay could not be mailed until 14 Jan 1942, when the ship arrived in Norfolk.

All enlistments were frozen as of 7 Dec 1941, men having the choice of shipping over (for 4 years) or extending their enlistments for 2 years.

Secretary of the Navy Knox told a group of officers, "No sensible man can expect to leave the Navy before 1946."

## Epilogue

*Secretary Knox's timing was off only by a year. Pharmacist's Mate Second Class William D. Southworth left Relief in mid-January 1942 for duty ashore.*

*Early the following year, Relief transited the Panama Canal yet again, spending the rest of the war serving Marine, Navy, and Army patients in virtually every major action in the Pacific theater. On 2 April 1945 the vessel came as close to tragedy as it ever would when Japanese bombers attacked the ship, one bomb falling several hundred yards wide.*

*By November of that year, Relief had steamed the equivalent of nearly four times around the world, evacuated close to 10,000 patients, and earning five battle stars.*

*Relief was decommissioned and struck from the Navy list on 19 July 1946. Two years later she was sold for scrap, thus ending the distinguished career of the first and only Navy vessel ever built as a hospital ship.*

## References

1. History of Ship Named *Relief*. Undated manuscript in the BUMED Archives.
2. Bowman JB. Letter of March 1921. BUMED Archives. □

Dr. Southworth, a resident of St. Petersburg, FL, served aboard USS *Relief* (AH-1) from 1939-1942.

\*A contingency plan developed by the U.S. military for fighting a war with Japan.





# Comfort and Mercy Homecoming



On 15 April 1991, USNS *Comfort* (T-AH 20) arrived at its home port of Baltimore after supporting Operation Desert Shield/Storm. As these photos indicate, the welcome home enthusiasm was in no way diminished by gray, rainy skies.

Eight days later, USNS *Mercy* (T-AH 19) returned to its home port of Oakland. The ride up San Francisco Bay befitted a returning veteran.



Photos by HM1 Bill Williams and HM2 Thomas Balfour, NSHS, Bethesda, MD

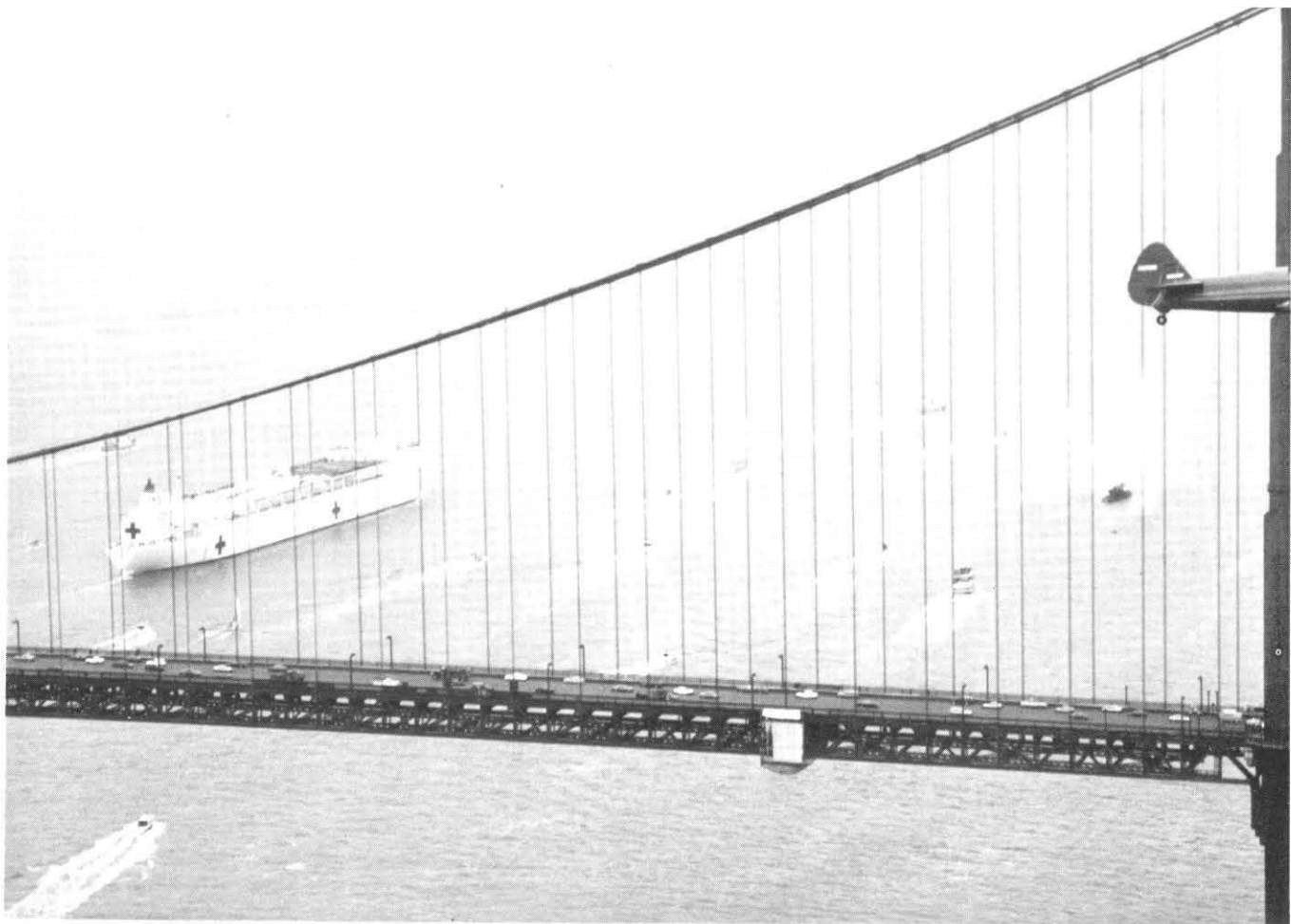




PH3 Geoffrey England, NAS Alameda, CA

# ***Mercy Returns*** **With a** **Shipload of Memories**





PH3 Geoffrey England, NAS Alameda, CA



USNS *Mercy* (T-AH 19) and its crew received a star-spangled welcome from thousands of exuberant bay area fans, as it moored at Oakland Supply Center's Pier 5 on 23 April 1991.

The 894-foot floating hospital ship steamed under the yellow ribbon-festooned Golden Gate bridge amidst a shower of yellow petals, escorted by a flotilla of smaller boats crowded with cheering families and friends. Other boats spraying towering columns of red, white, and blue water into the air added to the welcome.

More than 650 members of the crew, many of them from Naval Hospital, Oakland, had been flown back from Bahrain in early March and were already back at their duty stations. Left with more than 500 Navy and civilian personnel aboard, the big white ship returned home after standing by for 8 months in the Persian

Gulf, always ready to handle whatever might come her way.

In a few breaths of time, with the welcoming handshakes of the Navy's 30th Surgeon General, VADM James A. Zimble, MC, and Oakland's Commanding Officer, RADM David M. Lichtman, MC, exiting crewmembers seemed to forget the danger, the boredom, and the stress many said they had experienced. But what they probably will not soon forget are the memories.

For many, the highlight of their deployment was welcoming the 21 Americans and two Italian prisoners of war after they were released by Iraq.

"They came in two groups," said CAPT Richard Osborne, MC. "The first group had about six POWs who made up an interesting mixture. LT Jeffrey Zaun was a nonstop talker, a sort of bubbly guy, who wanted to talk immediately. His pilot, Bob Wetzel,

was just the opposite. He was quiet and it was important to let him have time." In fact, Osborne, who was *Mercy's* head of the Department of Medicine and medical coordinator for the POWs, said that it was essential to let the former prisoners set their own pace—"to let them unwind and realize that they were safe in their own way."

This was specially important, Osborne added, because some had been beaten and even tortured. The Iraqis had even attached electrodes to the ears of an Air Force officer when he refused to make a statement on TV.

Although most of the people interviewed agreed that the reception of the POWs was indeed an especially poignant moment of the deployment, one other event stands out in their memory—when *Mercy* pulled alongside USS *Independence* (CV-62).

"I think it was September 14th," recalled CDR Deborah Wear, MC, who was head of the ship's Psychiatry

Division. "The *Independence* came beside us and it was one of the most amazing things to be able to shout greetings back and forth."

"It was like a piece of home was near us," remembered Osborne. "After weeks of being all alone in the Gulf, it was really moving to be right beside them, to know that someone was actually out there."

For HMI Raphael Sanchez, the intensive care unit's leading petty officer, the friends he's made, the experiences he's shared, and the support of the American public are foremost. "I

think the world will probably remember how effectively we all did our job," he declared proudly.

Then there was "the terror" which YN3 Daren Holt, of Education and Training, said he felt at the thought of the casualties they might receive that added to the stress of "never knowing exactly what was going to happen," a sentiment echoed by the ship's administration officer, CDR Ernest Ghent, who added the word uncertainty as a factor of anxiety difficult to forget.

"In Vietnam, at least you knew what was happening day by day," said the Vietnam veteran. "You knew pretty much where you were going, what to do under certain circumstances, who you were going to be under. But with this operation, we never knew what was happening the following day and that was very frustrating."

But most of all it was the brief moments during *Mercy's* wandering up and down the Gulf of Oman and beyond on the way back home that will tug at the memory of the crew for a long time to come.

*Mercy's* Executive Officer, CAPT Michael Roman, MSC, spelled out some of those memorable moments in the final issue of the ship's newsletter, *The Pulse*. He remembered "... Wog night and the shellback ceremony; a young lady telling me that before the missile scare, 'I thought I'd die' meant she was merely embarrassed; lobster and roast beef at the celebrity dinner; the reservists arriving; and getting mail from people I haven't heard from in years."

It's over now for the *Mercy* crew. The time spent in service of their country in the Persian Gulf is nothing more than an exciting and meaningful memory to them now. Chances are, however, that the time spent on the Navy hospital ship will never be forgotten, and future generations of Americans will hear of their exploits from those moms, dads, grandmas, and grandpas who had proudly served aboard her. □

—Andree Marechal-Workman, Naval Hospital, Oakland Public Affairs.



**RADM David M. Lichtman, MC, former CO, Naval Hospital, Oakland, CA, welcomes home a *Mercy* crewmember.**

PH2 Robert Turgeon, NAS Alameda, CA







**Soviet physicians gather outside the Pacific Fleet Naval Hospital, Vladivostok. Photo by LT Gary Tabach.**

# Return to the Soviet Union

LT Gary Tabach, MSC, USNR

In the summer of 1985, the Chairman of the Joint Chiefs of Staff and his Soviet counterpart agreed to a 2-year plan for exchange visits between military delegations of the respective armed forces. In the first exchange, medical delegations visited each other's medical facilities. The second exchange was between the U.S. Atlantic Fleet and the Soviet Northern Fleet. The last exchange involved the Pacific Fleets of the United States and U.S.S.R. The primary objectives of the visits were to improve relations and to initiate the exchange of information on subjects of mutual interest. As a native of the Soviet Union, I was privileged to be a liaison and interpreter for the first and last exchange visits.

The first visit took place in March 1989 with the intention of showing the Soviets our medical research and treatment facilities as well as give them a taste of American life.

Among the many facilities the Soviets visited were the Uniformed Services University of the Health Sciences and Naval Medical Research Institute, Bethesda, MD; Walter Reed Army Medical Center, Washington, DC; USNS *Comfort*; an air transportable hospital; and Langley Air Force Base Hospital, VA. In addition, the delegation toured the Pentagon, White House, and Mount Vernon. The Soviet doctors were extremely interested in our health care and economic structures. They stressed that

part of the reason for their visit was to learn about our technology and its applications.

The last exchange was between the Soviet Pacific Fleet Naval Hospital and Naval Hospital, San Diego, CA. From 31 July 1990 to 4 Aug 1990, the crews of Soviet destroyers, *Admiral Vinogradov* and *Boyevoy*, along with the crew of their auxiliary tanker *Argun*, visited San Diego. I served as interpreter for the wardroom of USS *McLasky* (FFG-41).

Our full agenda did not consist of visiting medical facilities. However, the Soviet doctors expressed a desire to visit Naval Hospital, San Diego. While there, the Soviet doctors saw the ICU, CCU, surgery, and dental clinic. The doctors were impressed by the computerized patient monitoring systems, medication ordering and delivery systems, space-age robot-automated central supply system, and, of course, the highly motivated and professional personnel. They commented that while their personnel seemed as dedicated as ours, their technology lagged behind. After the hospital tour, I returned to the ship to assume my duties as interpreter.

One afternoon, I invited the Soviet doctors to visit our ship and have dinner with the captain and tour the sick bay. The fact that an independent duty technician (IDT) and junior corpsman are trained to function without a physician made an impression.

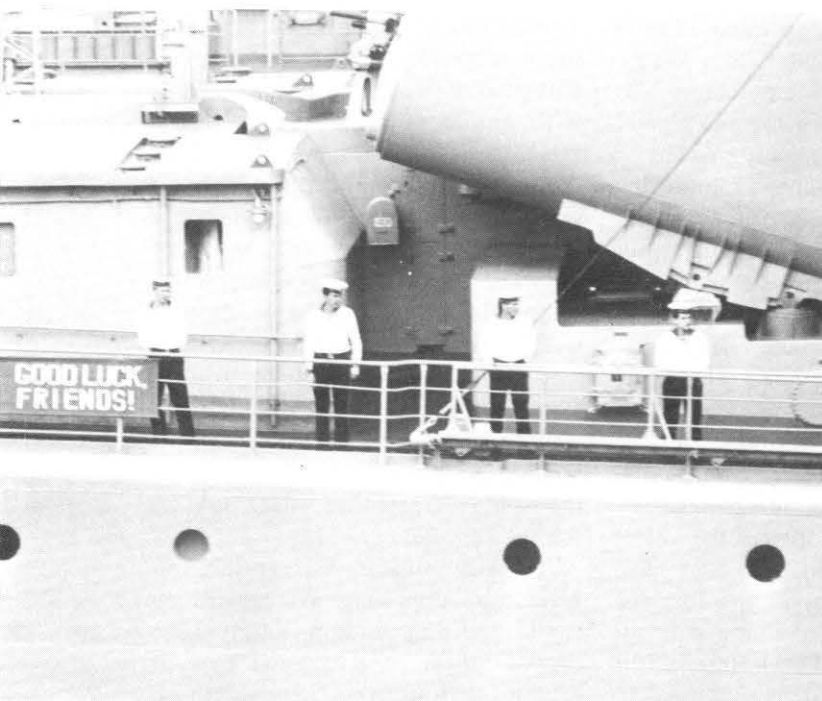
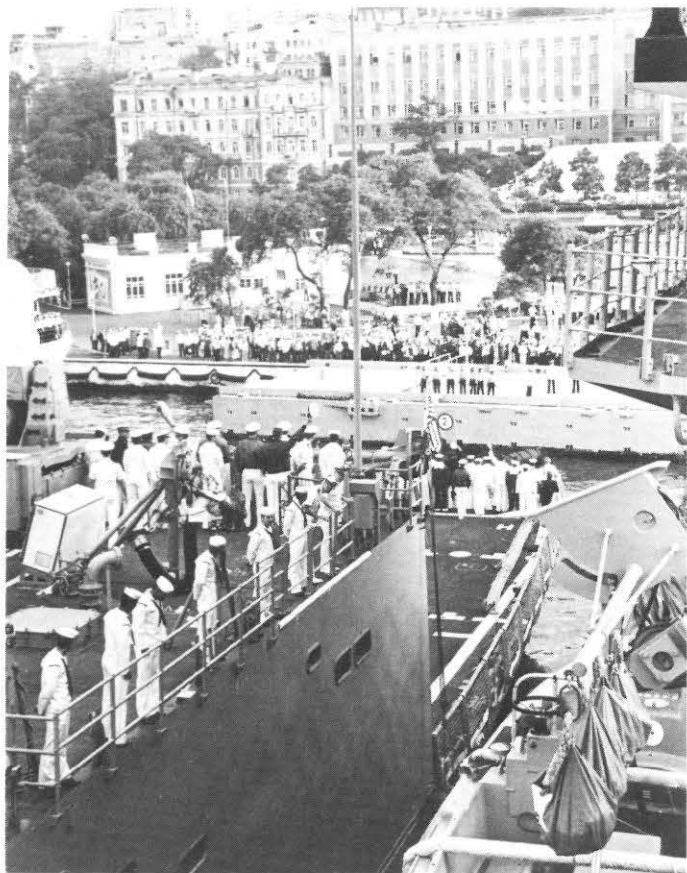
But, again, they were most impressed with the equipment. The IDT presented souvenirs to the doctors, one of which was an adhesive tape that doesn't hurt when being removed from the skin. This tape was a real treat, bringing smiles on usually serious Russian faces.

Before the Soviets departed, we received a tour of the Soviet ship, *Admiral Vinogradov*. The ship's physician was a young LTJG named Dmitry; his assistants were two "phelshers," conscripts with little medical training.

The large and spacious ship sported a swimming pool and sauna for wardroom relaxation. The ship's sick bay consisted of two large rooms equipped with ample cabinets, an operating table, and an X-ray which had no developer. I noted that there were no visible reference materials or racks in the sick bay. Nor did I see a stretcher anywhere on the ship. Many water faucets in the heads and staterooms did not function, and the enlisted head was merely a hole in the deck. In addition, the ship's crew wore sandal-type footwear as part of their uniform; the ship's executive officer assured us that the sandals created no safety hazards for the sailors.

A warm, fun-filled reception followed the ship tour. We feasted on caviar and pink salmon. In talking to Soviet officers and enlisted men, it became obvious to me that they envied the American people. Most of the

## Scenes in Vladivostok







Soviets were eager to discuss the Soviet Union's internal problems with any who would listen. I was very surprised to hear Soviets openly praising our system and condemning their own. I was accustomed to the opposite tune while growing up in the Soviet Union.

## Our Turn

On 7 Sept 1990, USS *Reuben James* and USS *Princeton* set sail from Yokosuka, Japan, for a reciprocal visit to the large, Soviet port city of Vladivostok. I was an interpreter and liaison for CDR James Day, commanding officer of *Reuben James*. When we arrived in the U.S.S.R., a sea of people welcomed us on the pier. The receptions began as soon as we landed and didn't end until we were underway for home.

At the first reception aboard the destroyer *Admiral Vinogradov*, the Mayor of Vladivostok, Mr. Blenov, openly expressed concern for the health of the population relating to the aftereffects of a typhoon that had hit Vladivostok before our arrival. Mr. Blenov, the city's first freely elected mayor, expressed concern about the supply of heat, electricity, and the city's fresh water supply for the upcoming winter. As a retired mer-

chant marine captain himself, the mayor complained about pollution of Vladivostok's port by sewage and petroleum.

The chief surgeon of the Pacific Fleet, COL Yuri Kochnev, was one of the many who greeted us on that first day at the pier. COL Kochnev, a large friendly man, invited me and LCDR Joseph Mullany, MC, a surgeon aboard *Princeton*, and all the corpsmen aboard both *Reuben James* and *Princeton* to tour their hospital, the largest medical facility in the eastern U.S.S.R.

The hospital, which was active during the Russo-Japanese War of 1905, had also served as training center for doctors of the Czarist army during World War I and had been a treatment facility for the thousands of casualties of both sides during the Socialist Revolution in 1917 and the civil war of 1918-20. In addition, the hospital played a large role in World War II training military personnel for the Eastern Front and treating the wounded who fought in Pacific waters. According to the Soviets, some American and British sailors from convoys also had been treated there.

When compared with American medical facilities, the differences were

shocking. The complex of old buildings between 50 and 100 years old is about a 1,200-bed facility with 100 practicing and 30 residential doctors. I toured only a small, "officers only" surgical ward. There were about 50 patients in the ward, approximately four patients to a room, most of them ambulatory. I saw only two nurses and a cleaning lady, all of whom were civilians. Within the wards and examining rooms are glass cabinets that are traditionally used to store medicines but, they appeared to be poorly stocked. As before, I did not see medical publications, materials, or references in the hospital. Since theft of goods is a problem in the U.S.S.R., there's a possibility that everything I didn't see was locked away. However, when I offered to exchange medical journals, they admitted that this type of literature is scarce.

I also saw two, one-person hyperbaric oxygen chambers and one, two-section hyperbaric chamber, which was operating during the tour. One end of this chamber was used for clinical treatments and the other for decompression sickness. The recovery room included four German-made dialysis units. And all the medical instruments and materials are reusable, even the bandages in some cases.

The hospital's head physician spoke proudly of the extensive renovations and extensions underway in the nursing staff dormitory area as well as in the experimental lung treatment rooms. In fact, the two experimental "lung/respiratory treatment rooms" are the pride of the hospital. One room is a 15-square-foot "salt room" with its walls and ceilings covered with thick layers of table salt. A concentrated "wet oxygen" is delivered through the salt into the room from an apparatus located outside the room. The other room, also 15-square-foot, is an experimental "mountain air" room in which air and atmospheric pressure are simulated to the altitude of 4,000 meters above sea level. The chief physician said that once the experimental rooms prove to be beneficial, a thousand similar rooms will be built throughout the



U.S.S.R. The rooms would be used for treating asthma, pneumonia, influenza, and practically all other lung and respiratory disorders.

In the way of health, infections continue to be a significant cause of morbidity among the Soviet troops. Influenza is the biggest problem, especially during the coldest months of the year. It was obvious that young sailors had very poor skin hygiene, and it was evident that skin infections were abundant. Hepatitis ranked second as the cause for morbidity. Tooth decay and dental care neglect was apparent in practically all adults and some children.

I found it interesting that ambulatory patients eat in the dining room; no food is delivered to the patients in bed. Apparently, a family member or a friend must provide food for the bedridden patients. That particular morning, the dining room served one hard-boiled egg, a slice of bread, and what appeared to be a glass of milk.

Overall, the hospital showed little evidence of upkeep. It did not look clean, the grounds surrounding the hospital were unkempt, the grass uncut, and wild bushes and plants had grown all around the hospital wards.

We were also privileged to spend an evening with a Russian family. Following a reception, COL Kochnev "kidnapped" us, drove us around the dark city for about a half an hour, then took us to his home. Dr. Kochnev and his family resided in a multiple building apartment complex, in which each building contained 700 flats. His flat was a three-room apartment with a small kitchen and bathroom. He and his wife live in one room and his son, daughter-in-law, and 3-month-old granddaughter live in another room. His son, a LTJG, is also a Navy doctor serving aboard a homeported ship in Vladivostok.

That evening Kochnev's family set out all the food they had, even frozen strawberries. We were not hungry, so we didn't eat much. As the evening progressed, conversation became easier and less translation was required. COL Kochnev shared with us his

dreams of working with Americans and of reaching the same level of success as Americans in practicing medicine.

The next day, we visited a naval infantry battalion commanded by CAPT Sergei Rodionov. CAPT Rodionov and I shared many personal stories and, before I departed for Japan, I was wearing his paratrooper badge and he my jump wings on his chest. His father had been the commander of the Soviet troops in Afghanistan before General Gromov relieved him, and had also been in charge of forces in the Soviet Republic of Georgia when soldiers massacred a peaceful demonstration.

CAPT Rodionov's battalion was an elite force. It was a highly respected, trained, and motivated group of young, athletic men. During their military exercises, I learned that they are trained to minimize water consumption. Offenders of this "water discipline" are strictly reprimanded. When I expressed concern about the dehydration effect on the troops, the Soviets, somewhat surprised, replied that that is why troops are trained not to be "water dependent."

While touring the barracks, I noticed that little effort had been made to alter or improve its ventilation or physical space. For the most part, living quarters in the barracks still reflected a head-to-head bed arrangement. Exercise equipment was very basic, consisting of free-weights. I saw neither first aid lockers nor stretchers in the buildings we visited.

One of the more unpleasant things I experienced during the short 4-day visit were the crowds standing by the gates of the base requesting medical help, mostly for their children. Some people even brought their sick children with them in hope of seeing an American doctor. They gave us notes requesting that medicine be sent to them, one of which was even in English! I spent my spare time at the pier or at the base listening to the questions and pleas of the hundreds of people seeking medical assistance. When they discovered that I spoke Russian, they

surrounded me. Every so often, I had to step back inside the base's gate for fear of being crushed by the masses. During these times, I felt weak and helpless. I couldn't look up any answers in the reference books or call someone to get proper medical care information. Yet, I could relate to them because not that long ago my family and I were just as desperate. We too were searching for a better life.

One Soviet said he had heard about American hospital ships going to other countries to provide medical care to the general public. I told him that the USNS *Mercy* had previously gone to the Republic of the Philippines for such a purpose. Of course, the next reply was that I ask my government next time to exchange hospital ships rather than warships. However, in situations like that one, I could only reply, with a shrug of my shoulders, the spreading open of my arms, and with the comment that I was only a lieutenant and had no say in such matters. I wish we could help the Soviet people by modeling and teaching them our medical system. I hope this will be possible in the near future, now that the Soviet political and economical systems are undergoing major changes.

Unfortunately, on the last morning in Vladivostok I didn't have time to say goodbye to any of the people I had met. On the trip back to Japan, fellow interpreters and I shared stories about our experiences. It is my belief that all our hosts had spoken openly about Glasnost and Perestroika, the Soviet Union's economical and political states, the Soviet and U.S. navies, and their feelings toward the American people. Yet, I noticed that most Soviets spoke more openly in the absence of Russian interpreters. As with everything else, Soviets preferred the American interpreters to their own. □

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LT Tabach was born in the Soviet Union and immigrated to the United States as a teenager. At the time this article was written he was serving as a pharmacist at the Naval Hospital Branch Medical Clinic, Naval Station, Mayport, FL 32228-0015.

# Highlights From the Naval Medical Research and Development Command

## • Bone Marrow Growth Factor for Mustard Gas Casualties

Bone marrow suppression and subsequent neutropenia would be expected to contribute significantly to morbidity and mortality in cases of mustard gas exposure. The most heavily exposed patients may experience prolonged neutropenia and, as a result, are susceptible to infection. Recognition of these facts led to a unique collaboration between scientists at the Naval Medical Research Institute (NMRI), Bethesda, MD, and clinical hematologists at the Naval Hospital, San Diego (NH,SD), CA. Since the bone marrow suppression due to mustard gas is similar to that seen following high-dose chemotherapy (nitrogen mustard was among the first chemotherapeutic agents ever discovered), the NMRI/NH,SD team sought to adapt a new class of biologic compounds known as hematopoietic growth factors to reduce bone marrow suppression. These agents, which will shortly enjoy widespread use in the world of clinical oncology, are capable of reducing the degree of marrow suppression and attenuating neutropenia following chemotherapy. At NMRI, a primate model of mustard gas-induced marrow suppression was developed and the bone marrow growth factor, granulocyte-colony stimulating factor (G-CSF) was used successfully to ameliorate neutropenia. These results lead to the development of an easily administered clinical treatment protocol which was approved by the FDA and Assistant Secretary of Defense (Health Affairs), as well as the Joint Chiefs of Staff. G-CSF was provided by Amgen Inc., a biotechnology company in Thousand Oaks, CA, and fielded to OCONUS medical treatment facilities expected to receive Desert Storm casualties. This type of clinical and laboratory collaboration will serve as a model for future efforts.

## • Liposome-Encapsulated Recombinant Hemoglobin

Rapid resuscitation of combat casualties at the forward echelons of medical care requires the development of an oxygen-carrying blood substitute which can defer the casualty's need for blood transfusion. Currently, a most promising blood substitute candidate is liposome-encapsulated hemoglobin (LEH), that is, hemoglobin encased in microscopic lipid spheres whose walls are similar to cell membranes. Until very recently, this and other blood substitute approaches have used natural hemoglobin derived from red blood cells. This hemoglobin, however, is in limited supply, requires labor-

intensive aseptic processing, and introduces a risk of viral and other microbial contamination in the finished product. A new source of hemoglobin is recombinant, genetically engineered human hemoglobin, which promises a capability for virtually unlimited production, microbial and viral sterility (especially from AIDS and hepatitis viruses), and prolonged shelf-life. The hemoglobin encapsulation process was developed through NMRDC sponsorship at the Naval Research Laboratory, Washington, DC. Currently, two biotechnology firms are involved in a joint effort to produce liposome-encapsulated recombinant human hemoglobin. Somatogen, Broomfield, CO, is producing recombinant hemoglobin for encapsulation and for further product testing, and Vestar, Inc., San Dimas, CA, is encapsulating the recombinant hemoglobin in liposomes. The challenge in this effort is to develop scaled-up, aseptic production techniques and to generate substantial quantities of a pure LEH product.

## • Active Heating of Divers' Fingers and Toes

Diving medicine scientists at the Naval Medical Research Institute (NMRI), Bethesda, MD, have recently evaluated active heating of divers' fingers and toes during long duration, cold water dives. Warm water-perfused gloves and socks were compared with prototype electrically heated gloves and socks. Finger and toe temperatures were maintained at either 12°C or 18°C during an 8-hour immersion in 3°C water, while measurements were made of power requirements, manual dexterity, grip strength, subjective comfort, and core temperature. The energy requirement for the electrical heating was only 24 percent of that required for the water perfusion system. It was determined that the 12°C finger and toe temperature was uncomfortable, with 50 percent of subjects reporting numbness by the end of the immersion. At 18°C, divers reported no discomfort or numbness. There were no differences in manual dexterity or grip strength between the 12°C and 18°C groups. Although there was speculation that peripheral warming might cause accelerated loss of total body heat by reducing body sensation of cold and increasing blood flow to surface tissues, this undesirable phenomenon was not observed. These findings have enabled the early fabrication of divers' electrically heated gloves and socks, and have improved operational capability.

For additional information contact NMRDC Code 40 at Commercial (301) 295-1468 or Autovon 295-1468.



# Modular Packaging for Emergency Room Exigencies

LCDR S. Klein, MC, USNR

**T**ime is of the essence in dealing with many emergency room scenarios. Unfortunately, valuable time is often wasted searching for emergency supplies, equipment, and pharmaceuticals. This may be due in part to staff turnover, inadequate or incomplete training, or pilferage. In any event, precious time can be lost fumbling about while the patient is waiting to be treated. In order to facilitate the rapid setup of equipment and supplies, a system of modular, pre-packaged trays is presented with the intention of reducing emergency treatment setup time, while simultaneously ensuring adequacy of equipment and supplies prior to the time of need.

## 1. Equipment:

a. Seven stainless steel instrument trays, identical to those presently used in the operating room, capable of fitting existing Mayo surgical stands.

b. Surgical instruments suitable for use in the following scenarios:

- (1) Tracheostomy
- (2) Tube thoracostomy
- (3) Temporary pacemaker insertion
- (4) Incision and drainage of abscess
- (5) Skin suture
- (6) Umbilical artery catheterization

c. Sterile supplies:

- (1) 4 x 4 Sponges, prepackaged
- (2) Vaseline occlusive dressings
- (3) Curlex bandages
- (4) Umbilical tape
- (5) "Opsite" dressing, large and small
- (6) Antibiotic impregnated gauze
- (7) Benzoin disposable applicators
- (8) Povidone prep solution, small disposable bottles
- (9) Steri-strips

d. Suture materials:

- (1) 2-0 Silk
- (2) 4-0 Silk
- (3) 5-0 Silk
- (4) 2-0 Chromic
- (5) 4-0 Chromic
- (6) 2-0 Nylon
- (7) 4-0 Nylon

e. Disposable equipment, single use:

- (1) Pleurevac set
- (2) Endotracheal tubes
  - (a) 3 mm
  - (b) 4 mm
  - (c) 5 mm
  - (d) 6 mm
  - (e) 7 mm
- (3) Tracheostomy with trochar:
  - (a) 4 mm I.D.
  - (b) 6 mm
  - (c) 8 mm
  - (d) 9 mm
- (4) Pacemaker leads
- (5) Pacemaker generator
- (6) Central venous cannulation trays, commercial

2. The above equipment can be packaged according to the algorithm below:

a. Tray "A"—Simple Suture Set:

- (1) 4-0 Silk suture, 4-0 nylon suture, 4-0 chromic suture
- (2) Skin forceps, two
- (3) Kelley clamps, two
- (4) Suture scissors
- (5) Scalpel, No. 15 with extra No. 11 blade
- (6) Syringe, 12 cc with 25 ga needle, 1¼ inch
- (7) Lidocaine ½ percent, 20 cc ampoule
- (8) 4 x 4 Cotton gauze



- (9) Benzoin applicator
  - (10) Steri-strips
  - (11) Syringe, 3 cc
  - (12) Syringe, 12 cc
  - (13) Needles, 18 ga, 22 ga, 25 ga
- b. Tray "B"—Sterile Field, Small:
- (1) Sterile towels, four
  - (2) Sterile fenestrated towel (small opening), one
  - (3) 4 x 4 Sterile gauze pads
- c. Tray "C"—Sterile Field, Large:
- (1) Sterile towels, eight
  - (2) Sterile fenestrated towel (large opening), one
  - (3) 4 x 4 Sterile cotton gauze
- d. Tray "D"—Tube Thoracostomy:
- (1) Chest tubes: 24, 26, 28, 30, 32 French, one each
  - (2) Kelley forceps, large, two pair
  - (3) Suture, silk 2-0 and 0
  - (4) Scalpel, No. 10 with extra No. 15 blade
  - (5) 4 x 4 Sterile gauze
  - (6) Pleurevac set, one (attached to tray, but not inside packaging)
- e. Tray "E"—Pacemaker:
- (1) Central venous access kit, commercial
  - (2) Transvenous pacemaker lead, 8 French
  - (3) Pacemaker generator
  - (4) 4 x 4 Sterile gauze
- f. Tray "F"—Tracheostomy:
- (1) Scalpel, No. 15 with extra No. 10 and 11 blades
  - (2) Tracheal retractor, spring activated
  - (3) Retractors, Army/Navy, small, two
  - (4) Tracheostomy cannulae with trochar
  - (5) Kelley forceps, small, three
  - (6) Mosquito forceps, small, four
  - (7) Kelley forceps, straight, one large
  - (8) Metzenbaum scissors, two
  - (9) Suture, 2-0 and 4-0 chromic
  - (10) Suture, 2-0 and 4-0 silk
  - (11) Suture, 2-0 and 4-0 nylon
  - (12) Povidine iodine, 10 ml bottle
  - (13) 4 x 4 Sterile gauze
  - (14) Endotracheal tubes, 3 mm, 4 mm, 5 mm, 6 mm, 7 mm
- g. Tray "G"—Umbilical Artery Cannulation:
- (1) Umbilical artery catheter
  - (2) Umbilical tape
  - (3) Adson forceps, small, two
  - (4) Vein retractor, disposable, two
  - (5) Suture 4-0 silk
  - (6) Suture scissors
  - (7) Metzenbaum scissors

- (8) Syringe, 6 cc
- (9) Preservative-free normal saline, 10 cc ampoule
- (10) 4 x 4 Sterile gauze
- (11) Benzoin applicator

3. The trays can thus be employed individually or in combination as dictated by the algorithm or by individual need.

a. For simple suture needs, Tray "A" will be used with Tray "B." Any additional suture material can be retrieved from the supply cabinet, as needs dictate.

b. For more complex suture needs, Tray "A" can be used with Tray "C."

c. For pacemaker insertion, Tray "E" can be used with Tray "B."

d. For tube thoracostomy, Tray "D" can be used with Tray "C."

e. For pacemaker, Tray "E" can be used with Tray "C."

f. For tracheostomy, Tray "F" can be used with Tray "B."

g. For umbilical artery cannulation, Tray "G" can be used with Tray "B."

Aside from these uses, other supplies need to be on hand, but do not need to be prepackaged. If no other supplies are otherwise available, the mission of the physician and surgeon can be accomplished. By opening these packs, the procedures can be initiated while other supplies can be gathered. The above equipment and supply lists are guidelines, and individual institutional preferences should dictate changes and additions.

Any shortages of disposables or equipment can easily be identified well before the need to perform an emergency procedure. By segregating supplies in this manner, the emergency room can avoid the unsavory position of inability to locate critical pieces of equipment. Patient safety is enhanced, and potential disaster may be avoided.

Further advantages of this or an adaptation of this approach is improved materiel handling capabilities. Critical pieces of equipment cannot "slip out the back door" to other parts of the hospital. Additional trays can be similarly assembled for other procedures.

This technique of modularization of equipment and supplies is particularly beneficial to smaller facilities where the procedures are infrequently performed. In smaller facilities, the support staff is often unfamiliar with the equipment requirements for emergency procedures, and due to chronic supply and equipment shortages, it is in the smaller facilities where inadequacies are likely to surface. □

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# After Hours at the Circus

LT E. Victor Ross, Jr., MC, USNR



A view of sailor's right upper extremity shows multiple lacerations and deep puncture wounds.

After 18 months of duty at our small isolated clinic in southern Japan, I was naive enough to believe that there would be no more surprises. After all, during that time I had seen everything from a patent ductus arteriosus in a 4-month-old to a mediastinal sarcoma in a 60-year-old retired karate instructor. On one occasion, NIS had even asked me to examine some suspicious hairs at an ammo site and determine whether they were animal or human. I finally relayed over radio in my best "Quincy" style that, "Yes, these are most definitely animal hairs!"

But when awakened one night and told that a sailor had been attacked by a Bengal tiger, I figured someone had the story wrong. As I rushed to the clinic, though, I remembered that there was a Japanese circus in town.

Once at the clinic, I observed an obviously intoxicated 27-year-old combative sailor with multiple lacerations and puncture injuries of the right upper extremity. It seems that he and some buddies had scaled the circus wall, entered the big top, and proceeded to challenge a tiger. The patient's right arm quickly was seized; the tiger eventually did open his mouth long enough for an escape, after which the patient immediately was transferred to the clinic.

Other than the obvious lacerations (see photo), initial examination

revealed a palpable bone defect in the distal humerus; also, a mild radial nerve palsy was identified. Minimal sanguinous discharge was present. Vital signs were unremarkable with the exception of a temperature of 100.5° F. The blood alcohol level was greater than 200 mg/dl. CBC revealed a normal hemoglobin and hematocrit.

After sedation with intermittent I.V. push morphine, anesthesia was achieved with direct wound infiltration of 1 percent lidocaine. Vigorous irrigation was performed with 10 liters of sterile normal saline solution. Cefoxitin was infused at 2 grams every 6 hours. Prior to antibiotic therapy, wound cultures were obtained from three representative lesions. After adequate anesthesia was obtained, digital probing of the wounds revealed two "through and through" puncture sites deep to the bone. No named neural or vascular structures could be palpated or visualized. Since there was no rapidly progressive soft tissue swelling, the original wounds were not extended surgically in the clinic.

The patient's medical record indicated a recent tetanus booster, and Japanese authorities established the absence of rabies in the animal. (It is interesting to note that Japan is rabies-free.)

By the following morning the patient's fever had resolved. His condition remained stable and he was medevaced 800 miles away to U.S. Naval Hospital, Yokosuka for definitive wound exploration by orthopedics. No significant neurovascular abnormalities were noted with the exception of localized swelling of the radial nerve in proximity to the fracture site. Counter incisions were made in the main OR to relieve dead spaces.

The wounds were allowed to heal by secondary intention, and the patient recovered uneventfully. The mild radial nerve palsy resolved within 2 months of the accident. Wound cultures failed to demonstrate any significant pathogens.

Tiger bites occur in developed countries primarily in animal handlers. The most common pathogen isolated from



these wounds is *Pasteurella multocida*.<sup>(1)</sup> Other than the sheer amount of crushing force exerted by a tiger's jaws, these bites resemble those of their smaller feline kin. Because of this tremendous force, though, the depth and severity of these wounds can be underestimated. Once life-threatening injuries have been ruled out, care should be directed toward minimizing potential sequelae of existing wounds while carefully performing physical examination for evidence of neurovascular compromise. Outside of an operating room environment in a combative patient, this task may prove difficult. Careful titration of local and narcotic anesthesia with adequate continuous respiratory monitoring allows for a good exam. Even an inebriated sailor will demonstrate muscle strength asymmetry so long as local pain is alleviated. If neurovascular injury is absent or minimal, the patient can safely be managed with aggressive local wound care and systemic antibiotics for at least 2-3 days awaiting a routine medevac flight. If, however, a gross deficit is noted, provisions should be made for an emergency medevac so that formal surgical exploration can be performed and potentially permanent disabilities minimized.

Empiric antibiotic therapy is indicated in *all* deep bite wounds. Suggested parenteral regimens include (1) cefoxitin or (2) penicillin G plus beta-lactamase-resistant penicillin or (3) ticarcillin-clavulanate potassium.<sup>(2)</sup>

In this case a good outcome resulted from (1) aggressive initial wound care, (2) parenteral antimicrobial therapy, and (3) timely surgical management.

## References

1. Burdge DR, Scheifele D, Speert DP. Serious *Pasteurella multocida* infections from lion and tiger bites. *JAMA*. 1985;253:3296-3297.
2. Brook I. Human and animal bite infections. *J Fam Pract*. 1989;28:713-718. □

Dr. Ross is presently a dermatology resident at the National Naval Medical Center, Bethesda, MD 20814.

## In Memoriam

Astronaut **Manley L. "Sonny" Carter, Jr.** died 5 April 1991 in a Georgia plane crash that also took the life of former Texas Senator John Tower.

CAPT Carter, a Navy flight surgeon, was born in Macon, GA, in 1947. He graduated with a B.A. degree from Emory University in 1969, and continued his studies at Emory University Medical School, graduating in 1973. Carter completed his internship in internal medicine at Grady Memorial Hospital in Atlanta, GA. As an early indication of his versatility, he played professional soccer for the Atlanta Chiefs of the North American Soccer League while enrolled in medical school.

In 1974, Dr. Carter entered the Navy and completed flight surgeon school in Pensacola, FL. After serving as a flight surgeon with the 1st and 3rd Marine Air Wings, he was assigned to Naval Flight Training in Beeville, TX, and received his Naval Aviator wings in 1978. Immediately following, Carter served as the senior medical officer aboard USS *Forrestal* (CV-59). He subsequently served as an F-4 fighter pilot with Marine Fighter Attack Squadron 333 at MCAS Beaufort, SC. Then he again served aboard *Forrestal* as a pilot with Marine Fighter Attack Squadron 115. Carter completed the U.S. Navy Fighter Weapons School (TOPGUN) in 1982 and the U.S. Navy Test Pilot School in 1984. During his aviation career, he logged over 3,000 hours flying and 160 carrier landings.

Carter joined NASA in 1984 as an astronaut candidate and became an astronaut mission specialist in 1985. He was the astronaut repre-

sentative on numerous NASA projects involving extravehicular activity and human physiology concerns during space flight. In November 1989, he flew aboard the Space Shuttle Discovery on STS-33, a Department of Defense mission. At the time of his death, he was preparing for his second space flight. He was to have flown in January 1992 on STS-42, the first International Microgravity Laboratory.

CAPT Carter was awarded the Air Medal, Meritorious Service Medal, Navy Achievement Medal, Navy Meritorious Unit Citation, Marine Corps Aviation Association Special Category Award, NASA Meritorious Service Medal, and NASA Space Flight Medal.

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**CAPT Manley L. "Sonny" Carter, Jr.**



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